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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,735	07/25/2001	Hideo Yoshida	1163-0349P	5603

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EXAMINER

ABRAHAM, ESAW T

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/911,735

Applicant(s)

YOSHIDA ET AL.

Examiner

Esaw T Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08/19/04 (amndt A).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Final rejection

Response to the applicant's amendments

**** Applicants' argument/amendments with respect to cancelled claims 1-24 and added claims 25-42 filed on 08/19/04 have been fully considered. Therefore, the rejection in view of Baggen et al. (U.S. PN: 5,872,798) has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Halter (U.S. PN: 6,754,290). The examiner would like to point out that this action is made final (MPEP 706.07a).**

**** The objection of record for abstract and title are withdrawn in response to applicant's amendment.**

DETAILED ACTION

1. Claims 1-24 are cancelled, newly added claims 25-42 presented for examination.

Claim objections

2. Claim 42 is objected to because of the following informalities:

Please change the word "making a soft determination" to "performing a soft determination" (see line 12 of claim 42).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U. S. C 112

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. Claims **36 and 40-42**, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 36 recites, the phrase “full error correction and partial error correction code” are indefinite (see lines 3 and 4 of claim 36) since it is unclear how to distinguish between a full error correction and partial error correction.

b) Claim 42 recites, the phrase “within an acceptable range” is indefinite (see line 13 and 15 or claim 42).

c) Claim 40 recites the limitation “the encoded data” in line 6 of claim 40. There is insufficient antecedent basis for this limitation in the claim.

d) Claim 41 recites the limitation “the encoded data” in line 1 of claim 41. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101, Non Statutory

4. Claims **25-41** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because:

a) The language of the claim (**as in claims 1, 32 and 36**) raises a question as to whether the method claim step (applying a first and second error correction to data and creating frames of error correction codes and data) is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C 101.

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b) Claims **26-31, 33-35 and 37-41** are rejected due to the dependency on a rejected base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere CO.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims **25, 26, 28, 32, 34-36, 38 and 40-42**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Halter (U.S. PN: 6,754,290).

As per claims **25, 32, 36, and 42**, Halter in figure 3A disclosed a method of coding and a coder configured as a parallel concatenated turbo coder wherein the coder includes constituent coders (90, 98) (to perform first and second error correction codes) and code interleaver (92), and the output of the constituent coders (90, 98) multiplexed by a multiplexer (switching circuit) into the output data stream for total coding rate of 1/3 and additional constituent codes and code

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interleaver pairs optionally added to reduce the coding rate for increased forward error correction (see col. 4, lines 4-13). **Not explicitly do not teach** in the method step is creating frames having plurality of blocks (error correction and data blocks). **Nevertheless**, as would have been well known to one ordinary skill in the art at the time the invention was made, such creating of blocks or frames of error corrections and data are required because such data and ECC codes must be arranged as a frames of a block in order to transmit between network points as a unit complete with addressing and necessary protocol control information. **Accordingly**, it would have been obvious to one ordinary skill in the art to create frames of any data information to improve efficiency and improve the information bit rate.

As per claim **26**, Halter teaches in figure 3A teach a switching circuit (multiplexer) coupled to the constituent coders.

As per claims **28, 34, 35 and 38**, Halter teach that constituent coders (90 and 98) may be various types of coders including block coders or convolutional coders and as convolutional coders, constituent coders (90 and 98) typically have a small constraint length such as 4 (four) to reduce complexity, and are recursive systematic convolutional (RSC) encoders (see col. 4, lines 4-13).

As per claims **40 and 41**, Halter teach that the coding system improves the performance of digital cellular telephone system including satellite communication systems and wire line communication system such as digital cable and telephone systems (see col. 2, lines 35-44).

6. Claims **27, 29-31, 33, 37 and 39**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Halter (U.S. PN: 6,754,290) in view of Xin et al. (U.S. PN: 6,795,507).

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As per claims **27, 33, 37 and 39**, Halter substantially teach a turbo decoder for receiving the soft decision data and providing a hard decision data, wherein the turbo decoder includes a MAP decoder comprising: a set of MAP engines (see claim 1). Halter **does not explicitly teach** first and second decoders for decoding error correction codes. **However**, Xin et al. in figure 5 teaches a system comprising first and second encoders (as channel encoder and modulation encoder) coupled to an inner code decoder to decode and determine first error correction code, transfer the decoded data to de-interleaver and information refresher (75, 78) (output circuits) connected to an outer convolutional decoder (76) to decode or generate second error correction code then to transfer to an interleaver and information refresher (77, 79). **Therefore**, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to implement the teachings or method of Halter using the combination of decoders and output circuits for decoding and correcting errors. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated in order to increase in the receiver performance and coding gain (see col. 5, lines 20-25).

As per claims **29-31**, Halter in view of Xin et al. teach all the subject matter claimed in claim 27 including Halter teach that additional constituent codes (third error correction coder or encoder) and code interleaver pairs may be added to reduce the coding rate for increased forward error correction (see col. 4, lines 4-13).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 6,6606,724 Krieger et al.


US PN: 6,747,827 Bassett et al.

8. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8-5.


If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for after final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Esaw Abraham

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Primary Examiner